

IN THE CLAIMS

1. A method for fetching bandwidth control information about a datapacket in a network that is associated with a  
5 source or destination IP-address of such datapacket, the method comprising the steps of:

parsing an IP-address from an information header in a datapacket;

10 truncating off a least significant portion of said IP-address to form a segment number;

searching for said segment number in at least one of an ordered list of segment numbers and a content-addressable memory (CAM);

15 pointing to a policy lookup table if a match occurs in the step of searching; and

indexing with said least significant portion of said IP-address into said policy lookup table to find a policy identification value.

20 2. The method of claim 1, further comprising the step of:

using said policy identification value to control a communication bandwidth afforded to the throughput of said datapacket.

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3. The method of claim 1, further comprising the preliminary steps of:

30 associating said policy identification number with an IP-address in said network and recording such association in said ordered list of segment numbers and said policy lookup table.

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4. A network, comprising:

a local group of network workstations and clients with a set of corresponding local IP-addresses, and that periodically access a wide area network (WAN);

5           at least one type of application program for executing packet exchanges that involve any of the local group;

          a class-based queue (CBQ) traffic shaper disposed between the local group and said WAN, and providing for a  
10       variety of access bandwidths;

          an IP-address/port-number classifier disposed within the CBQ traffic shaper, and providing for an identification of which application program transmitted or received a particular packet at any of the local group; and  
15       an automatic bandwidth manager (ABM) disposed within the CBQ traffic shaper, and providing for a controlled delivery rate of each said particular packet that is dependent on the application-program type determined by the IP-address/port-number classifier;

20       wherein, bandwidth control information about a datapacket in the network is associated with a source or destination IP-address of such datapacket, and a processor provides for parsing an IP-address from an information header in a datapacket, truncating off a least significant portion  
25       of said IP-address to form a segment number, searching for said segment number in at least one of an ordered list of segment numbers and a content-addressable memory (CAM), pointing to a policy lookup table if a match occurs in the step of searching, and indexing with said least significant  
30       portion of said IP-address into said policy lookup table to find a policy identification value.

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5. The network of claim 4, wherein:

the CBQ traffic shaper is configured such that a user service level agreement (SLA) policy is attached to each and every said local IP-address.

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6. The network of claim 4, wherein:

the CBQ traffic shaper is configured so any SLA policy conflicts between local IP-address transfers are resolved with a lower-speed one of said conflicting policies taking precedence.

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7. The network of claim 4, wherein:

the CBQ traffic shaper dynamically attaches SLA policies and readjusts the CBQ traffic shaper to allow an on-demand type of delivery to any of said local IP-addresses.

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8. A computer network method, comprising the steps of:

dividing a plurality of datapackets into classes that include at least one class for packets exchanged over a computer network by a particular application program;

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identifying which class each particular one of plurality of packets belongs to on said computer network;

controlling a delivery rate of an identified particular one of plurality of datapackets according to its classification;

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parsing an IP-address from an information header in a datapacket;

truncating off a least significant portion of said IP-address to form a segment number;

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searching for said segment number in an ordered list of segment numbers;

pointing to a policy lookup table if a match occurs  
in the step of searching; and

indexing with said least significant portion of  
said IP-address into said policy lookup table to find a  
5 policy identification value.

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